G3000

Service Manual

ultratec special effects inc™

www.ultratecfx.com

VER. 14.12.09

Heat Exchanger Replacement

- Make sure the main power cord is disconnected from power before attempting to remove the outer cover
- Make sure unit has cooled sufficiently to perform the operation

1. Make sure the machine is unplugged.
2. Using a #2 Phillips Screw Driver remove the 12 screws on the lid. Carefully lift the case off and carefully detach the grounding wire screwed to the lid.
3. Disconnect the copper tubes from the pumps by loosening the 7/16" brass nut on the pump. This line may be under high pressure if the tube was plugged. Slowly loosen the pump that connects to the copper 1/4 tube inlet fitting to release any pressure.
4. Remove the two slot screws (or ¼" hex) from the front edge of the block cover. Slide the cover backward to release the two back tangs from the lower cover. Lift the cover off.
5. Remove the insulation on top.
6. Using a ½" socket, loosen the five nuts. Remove all 5 nuts and washers **(these will not be reused).** Be careful not to damage any exposed wiring. Remove the upper steel plate by gently lifting the plate up out of the way.
7. Remove the ¼" aluminum plate cautiously to avoid damage to the thermocouple. Examine the thermocouple wires for moisture as this may cause failures.
8. Remove the aluminum wear plate that is positioned above the coil **(this will not be reused).**
9. Remove the used copper tube from the block **(this part will not be reused).**
10. Remove the second thin wear plate **(this part will not be reused).**
11. Lift the thick aluminum plate up cautiously to avoid damage to the heaters.
12. Remove the third thin wear plate **(this part will not be reused).**
13. Remove the second coil from the block **(this part will not be reused).**
14. Remove the forth thin wear plate **(this part will not be reused).**

Heat Exchanger Replacement (con't)

15. When replacing the parts, ensure all mating surfaces are clean to promote good thermal conduction.
16. Place a new narrow aluminum wear plate on the block. **Note:** All plates can only be installed one way due to the offset bolt pattern. There are two sizes of wear plates (narrow and wide)
17. Place the new copper tube on the wear plate. Adjust the runs of the tube so they do not touch the bolts. The bends in the coil must be facing DOWNWARDS.
18. Place a new wide aluminum wear plate on the coil.
19. Place the thick aluminum plate onto the wear plate.
20. Place a new wide aluminum wear plate on the thick aluminum plate.
21. Place the second copper tube on the wear plate. Adjust the runs of the tube so they do not touch the bolts. The bends in the coil must be facing UPWARDS.
22. Place a new narrow aluminum wear plate on the coil.
23. Place the 1/4" aluminum plate on the wear plate.
24. Add the upper steel plate while checking that the wires are not pinched or shorted. Thread the five new nuts and washers on finger tight. Check the alignment of the layers. Tighten the center nut down snug with a ½" socket. Repeat with the other four nuts. Move to the center nut and pull tighter by a quarter turn. This will give 5-7lbs of torque. Repeat this on the remaining four nuts.
25. Attach the tubes by screwing in the 7/16" brass nut at the pumps. Tighten securely.
26. Reinstall the top insulation. Power up the G3000 and allow it to heat up fully. Run fog through the fog machine until it reaches its lowest output. Turn off the fog machine and disconnect from the power source. Retighten bolts if necessary.
27. Reconnect the grounding wire to the case and slide the lid into place and fasten the machine screws. Plug the machine in and allow it to heat up completely. Now you're ready to fog.

Note: For a detailed visual and indentifcation of parts, visit the service section of the G3000 on www.ultratecfx.com and view the "G3000 Heater Block Parts Identification Sheet".